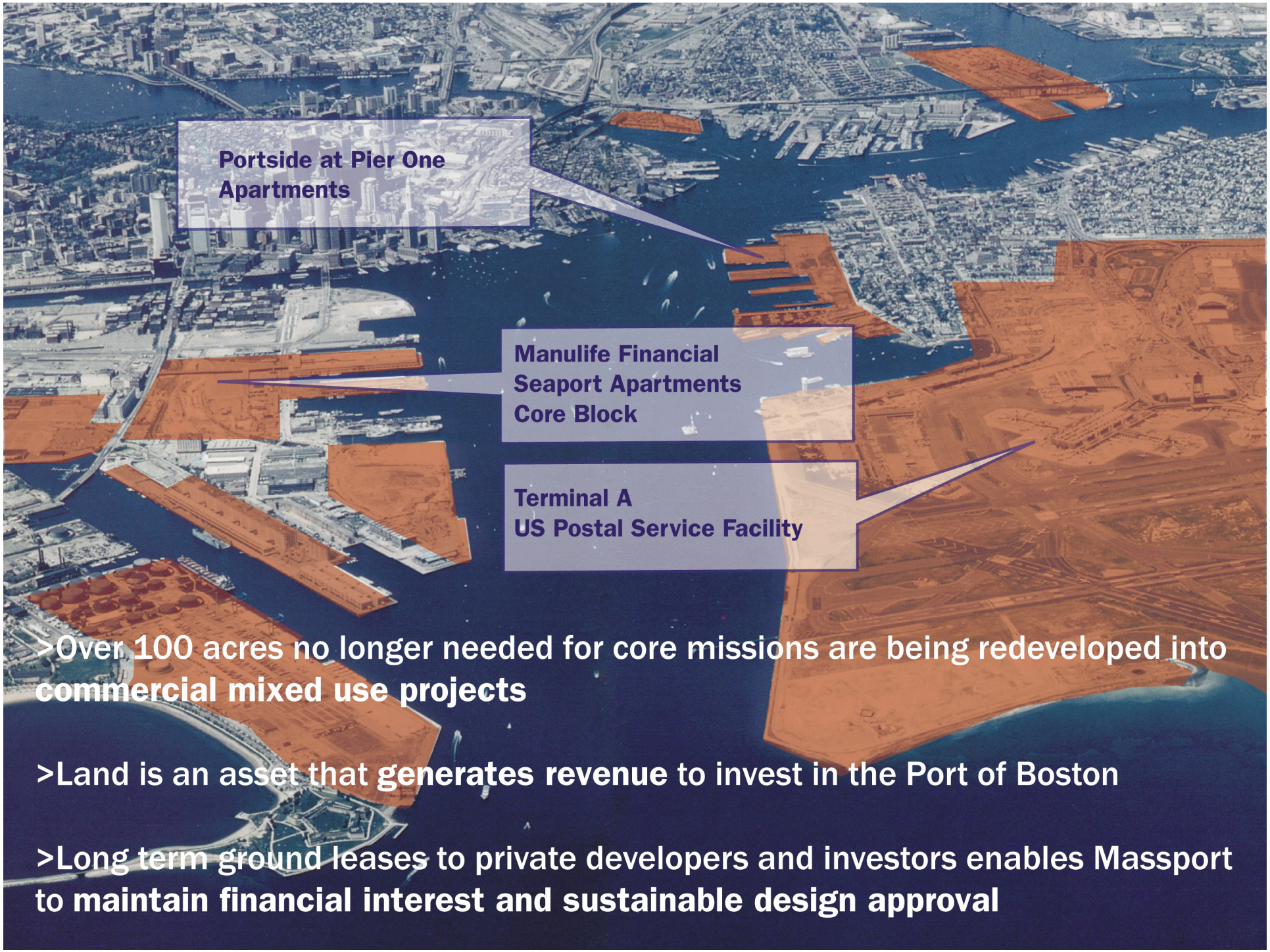
Massachusetts Port Authority

Mission: To enhance and enable economic growth and vitality for the benefit of our stakeholders through public service leadership in the operation of world-class transportation facilities.

Land and Facilities Assets

- Aviation-Related
  - Logan International Airport
  - Hanscom Field
- Maritime-Related
  - Conley and Moran Terminals
  - Massport Marine Terminal / Fargo Street
  - Black Falcon Cruise Terminal
- Tobin Bridge
- Commercial Development
  - South Boston / East Boston / Charlestown
  - 8 million square feet estimated at build-out


MASSPORT
Constitution Plaza Marina
Boston Autoport
East Boston Piers
Commonwealth Flats Development Area
Fargo Street Terminal
Massport Marine Terminal
Black Falcon Cruise Terminal
Logan International Airport
International Cargo Port
Conley Container Terminal
>a self-financed, independent authority that owns and operates Logan Airport, the Port of Boston, Tobin Bridge and Hanscom Field
>major land ownership on Boston Harbor



>Over 100 acres no longer needed for core missions are being redeveloped into **commercial mixed use projects**

>Land is an asset that **generates revenue** to invest in the Port of Boston

>Long term ground leases to private developers and investors enables Massport to **maintain financial interest and sustainable design approval**

MASSPORT PROGRAMS FOR SUSTAINABLE DESIGN AND CONSTRUCTION

EXTERNAL FOCUS

> Demonstrate to developers and investors that we are a **competent partner**

> Demonstrate to "impacted communities" that we are actively involved in **reducing environmental impacts**

INTERNAL FOCUS

> Massport's Environmental Management Policy includes "*define* and *apply* sustainable design principles in the planning, design, operation and decommissioning of its facilities."

> Demonstrate to board and senior administration that we are **adding value**

WHY BUILD GREEN

Massport Goals:

Asset Management

sustainablity increases the value and revenue generating potential of projects on Massport properties

Environmental Benefits and Permitting Strategy

reduce environmental impact of buildings and reduce permitting time for individual projects

Citizenship

positively impact the communities surrounding Massport-owned property

Design Excellence

promote innovative, environmentally responsible and beautiful design

MASSPORT PROGRAMS FOR SUSTAINABLE DESIGN AND CONSTRUCTION

LONG TERM GROUND LEASE PROJECTS

- Request for Developer Interest | Proposals
- MEPA, Article 80 and Other Permitting
- Design Review
  - Expertise | Advocacy
  - De-mystifying | Strategy for LEED certification

MASSPORT PROJECTS

- Designer Selection Panel
- Massport Bid Documents / Specifications

‘Best Efforts’ Toward LEED© Certification

- Commitment
  - Project Owner / Developer
- Active Engagement / Process
  - Project Team Integration
  - Required Work Sessions
- Design Review Submissions
  - Conceptual, Schematic, DD, CD
  - Joint with BRA
- Documentation

Project Checklist

Sustainable Sites

14 Possible Points

Y		Prereq 1	**Erosion & Sedimentation Control**	Required
Y	?	N	Credit 1	**Site Selection**	1
Y	?	N	Credit 2	**Urban Redevelopment**	1
Y	?	N	Credit 3	**Brownfield Redevelopment**	1
Y	?	N	Credit 4.1	**Alternative Transportation**, Public Transportation Access	1
Y	?	N	Credit 4.2	**Alternative Transportation**, Bicycle Storage & Changing Rooms	1
Y	?	N	Credit 4.3	**Alternative Transportation**, Alternative Fuel Refueling Stations	1
Y	?	N	Credit 4.4	**Alternative Transportation**, Parking Capacity	1
Y	?	N	Credit 5.1	**Reduced Site Disturbance**, Protect or Restore Open Space	1
Y	?	N	Credit 5.2	**Reduced Site Disturbance**, Development Footprint	1
Y	?	N	Credit 6.1	**Stormwater Management**, Rate or Quantity	1
Y	?	N	Credit 6.2	**Stormwater Management**, Treatment	1
Y	?	N	Credit 7.1	**Landscape & Exterior Design to Reduce Heat Islands**, NonRoof	1
Y	?	N	Credit 7.2	**Landscape & Exterior Design to Reduce Heat Islands**, Roof	1
Y	?	N	Credit 8	**Light Pollution Reduction**	1

Water Efficiency

5 Possible Points

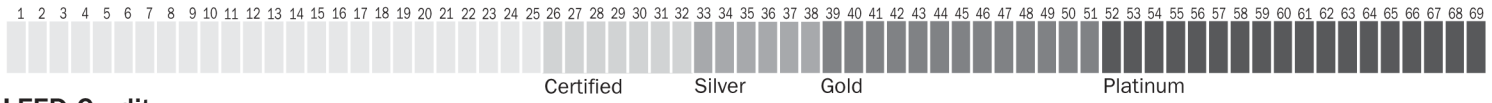
Y	?	N	Credit 1.1	**Water Efficient Landscaping**, Reduce by 50%	1
Y	?	N	Credit 1.2	**Water Efficient Landscaping**, No Potable Use or No Irrigation	1
Y	?	N	Credit 2	**Innovative Wastewater Technologies**	1
Y	?	N	Credit 3.1	**Water Use Reduction**, 20% Reduction	1
Y	?	N	Credit 3.2	**Water Use Reduction**, 30% Reduction	1

Energy & Atmosphere

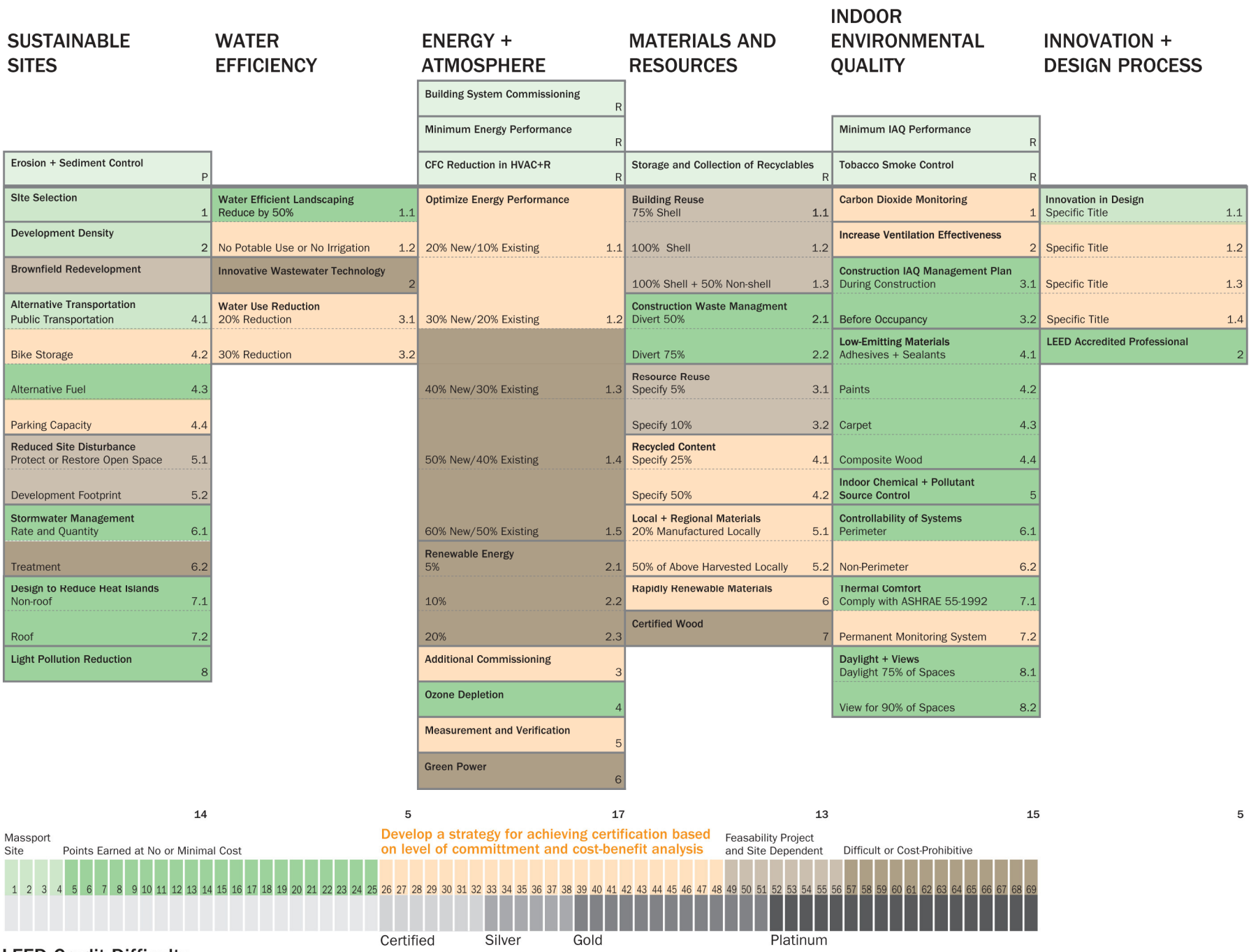
17 Possible Points

Y		Prereq 1	**Fundamental Building Systems Commissioning**	Required
Y		Prereq 2	**Minimum Energy Performance**	Required
Y		Prereq 3	**CFC Reduction in HVAC&R Equipment**	Required
Y	?	N	Credit 1.1	**Optimize Energy Performance**, 20% New / 10% Existing	2
Y	?	N	Credit 1.2	**Optimize Energy Performance**, 30% New / 20% Existing	2
Y	?	N	Credit 1.3	**Optimize Energy Performance**, 40% New / 30% Existing	2
Y	?	N	Credit 1.4	**Optimize Energy Performance**, 50% New / 40% Existing	2
Y	?	N	Credit 1.5	**Optimize Energy Performance**, 60% New / 50% Existing	2
Y	?	N	Credit 2.1	**Renewable Energy**, 5%	1
Y	?	N	Credit 2.2	**Renewable Energy**, 10%	1
Y	?	N	Credit 2.3	**Renewable Energy**, 20%	1
Y	?	N	Credit 3	**Additional Commissioning**	1
Y	?	N	Credit 4	**Ozone Depletion**	1
Y	?	N	Credit 5	**Measurement & Verification**	1
Y	?	N	Credit 6	**Green Power**	1

SUSTAINABLE SITES	WATER EFFICIENCY	ENERGY + ATMOSPHERE	MATERIALS AND RESOURCES	INDOOR ENVIRONMENTAL QUALITY	INNOVATION + DESIGN PROCESS
		Building System Commissioning			
		Minimum Energy Performance		Minimum IAQ Performance	
Erosion + Sediment Control		CFC Reduction in HVAC+R	Storage and Collection of Recyclables	Tobacco Smoke Control	
SIte Selection	Water Efficient Landscaping	Optimize Energy Performance	Building Reuse	Carbon Dioxide Monitoring	Innovation in Design
Development Density				Increase Ventilation Effectiveness	
Brownfield Redevelopment	Innovative Wastewater Technology			Construction IAQ Management Plan	
Alternative Transportation	Water Use Reduction		Construction Waste Managment		
			Resource Reuse	Low-Emitting Materials	LEED Accredited Professional
Reduced Site Disturbance			Recycled Content		
				Indoor Chemical + Pollutant Source Control	
Stormwater Management			Local + Regional Materials	Controllability of Systems	
		Renewable Energy			
Design to Reduce Heat Islands			Rapidly Renewable Materials	Thermal Comfort	
			Certified Wood		
Light Pollution Reduction		Additional Commissioning		Daylight + Views	
		Ozone Depletion			
		Measurement and Verification			
		Green Power			
14	5	17	13	15	5



LEED Credits



LEED Credit Difficulty

FINANCIAL BENEFITS

Energy Savings	$5.80/sf
Emissions Savings	$1.20/sf
Water Savings	$0.50/sf
Operations and Maintenance Savings	$8.50/sf
Average Extra Cost of Building Green	-$5.00/sf
NET Benefit	**$11.00/sf**

20 year net present value

Source: Capital E Analysis from Gregory Kats "Green Building Costs and Financial Benefits", p8.

COST of LEED

Application >

$0.01/sf to register (max $3,000)

$0.02/sf to submit application materials (max $6,000)

+

Soft Costs > energy modelling, required documentation, and consultant and comissioning fees

+

Construction Costs > added material and labor cost for building green

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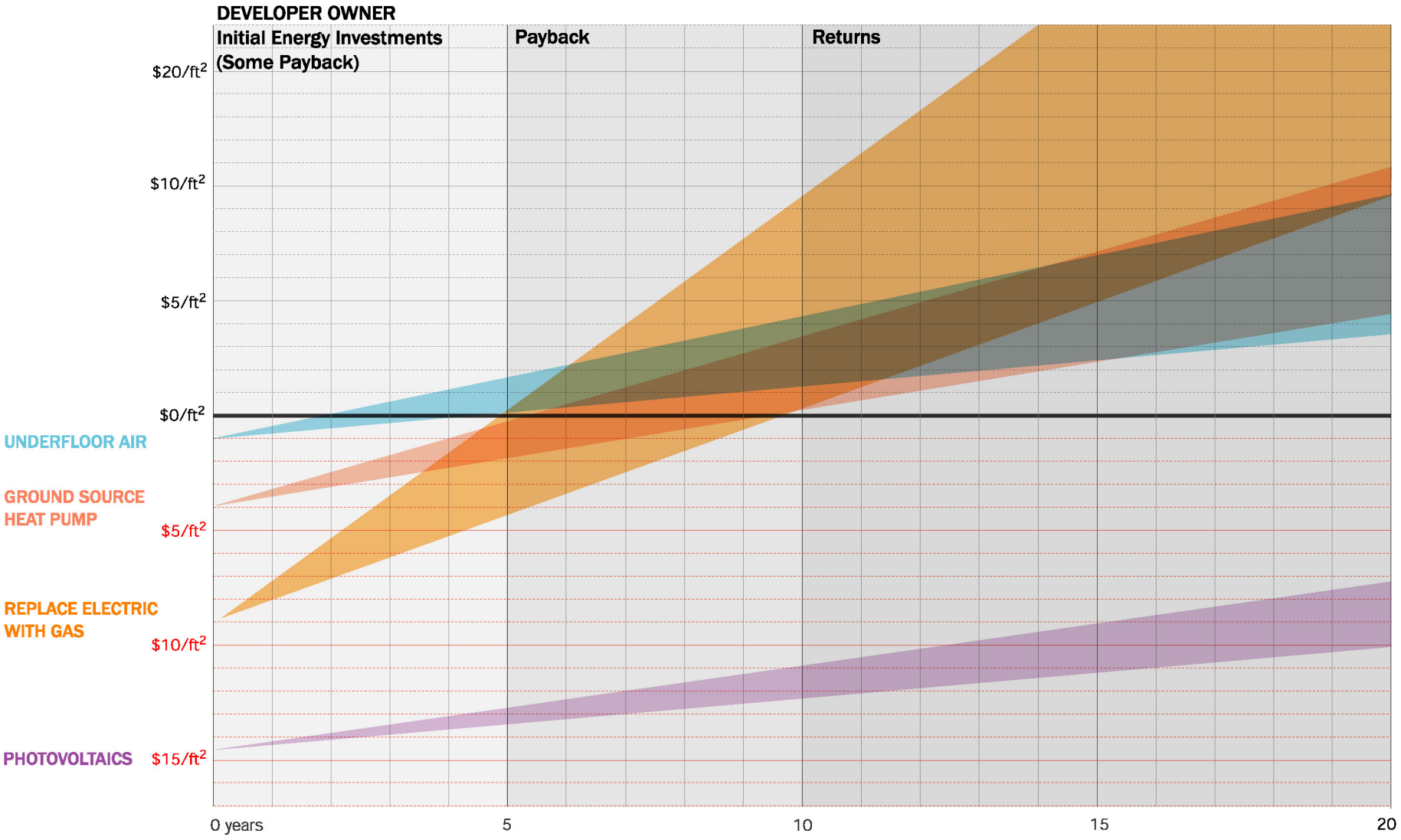
Average Green Cost Premium > **0.66%** for LEED Certification*

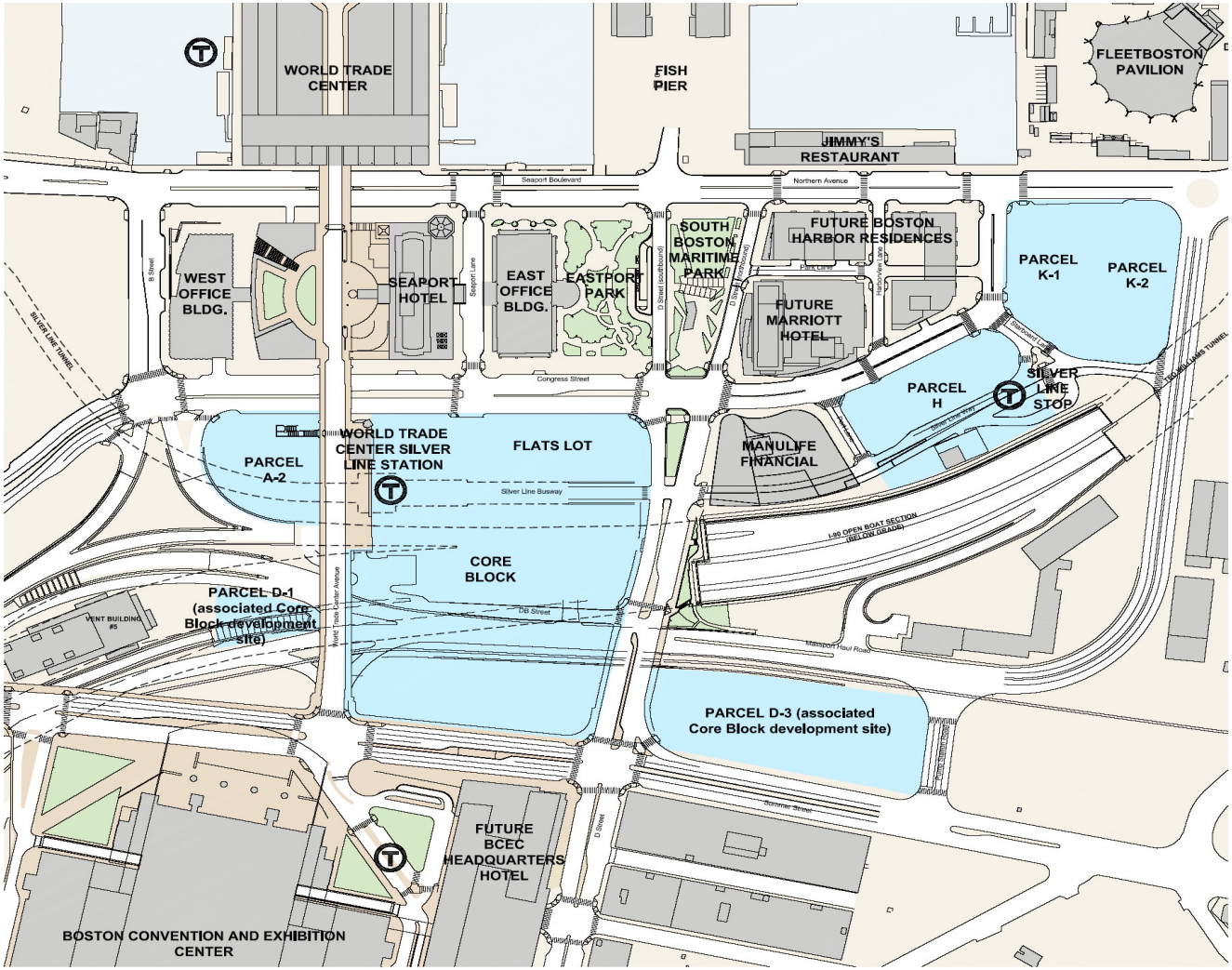
*based on a study of 8 schools and office buildings

Source: USGBC and Capital E Analysis from Gregory Kats "Green Building Costs and Financial Benefits", p3.



Cumulative Life Cycle Savings for Energy Investments

South Boston Projects



- Manulife Financial
- Parcel G/J Apartments
- Marriott Renaissance Hotel
- Waterside Place

massport


MANULIFE FINANCIAL

Parcels G/J and Marriott Renaissance

Waterside Place